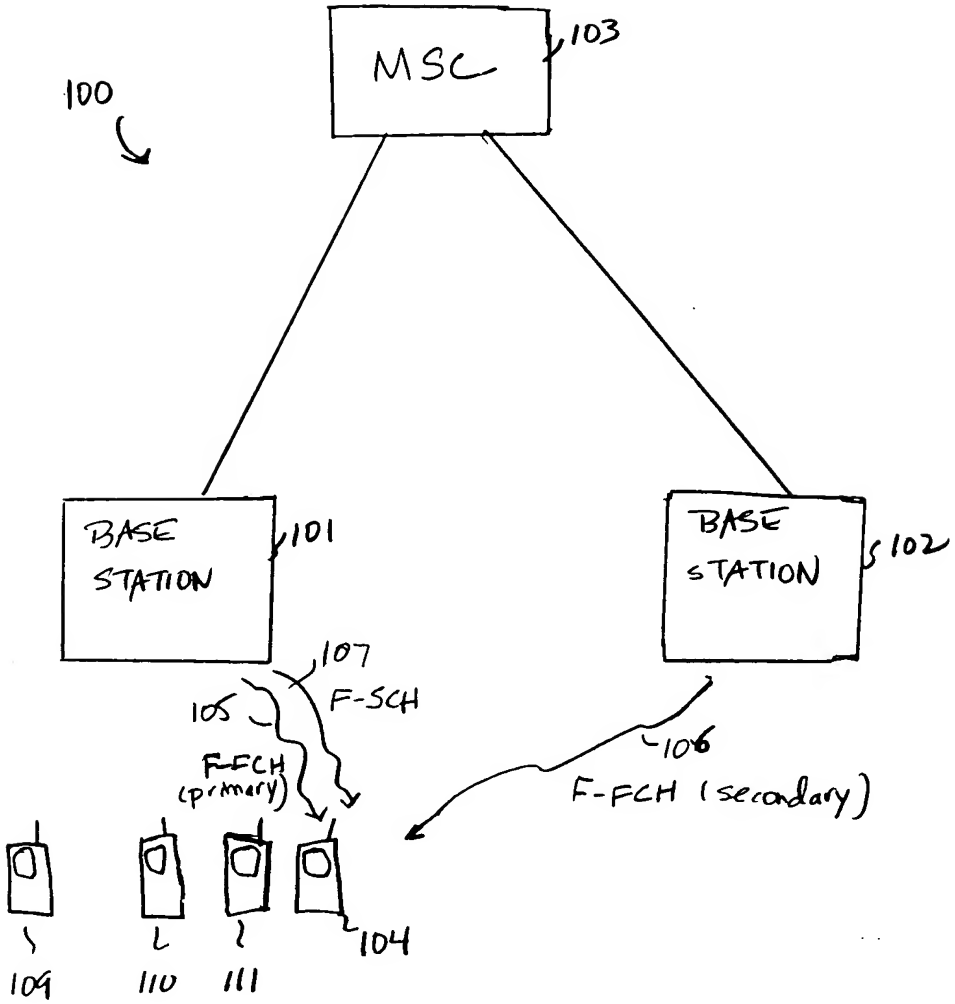
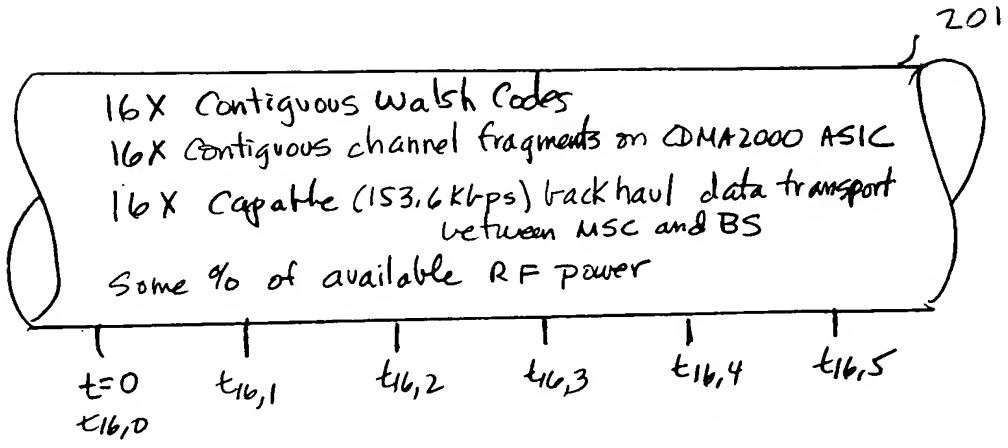

MSC
103
100
BASE STATION
101
BASE STATION
102
107
F-SCH
105
F-FCH (primary)
106
F-FCH (secondary)
104
109
110
111

FIG. 1


201
16X Contiguous Walsh Codes
16X Contiguous channel fragments on CDMA2000 ASIC
16X Capable (153.6 Kbps) backhaul data transport between MSC and BS
Some % of available RF power
t=0
t16,0
t16,1
t16,2
t16,3
t16,4
t16,5

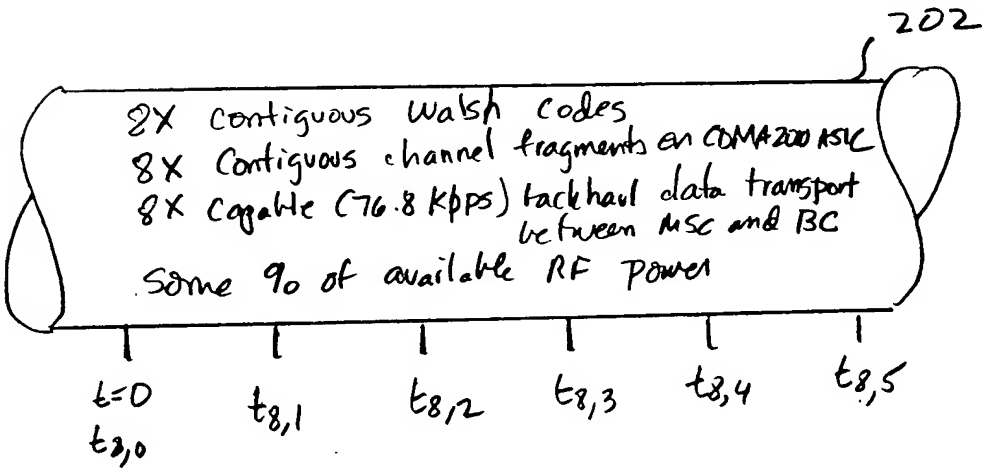

202
8X Contiguous Walsh Codes
8X Contiguous channel fragments on CDMA2000 ASIC
8X Capable (76.8 Kpps) backhaul data transport between MSC and BC
Some % of available RF power
t=0
t8,0
t8,1
t8,2
t8,3
t8,4
t8,5

FIG. 2

FIG 3

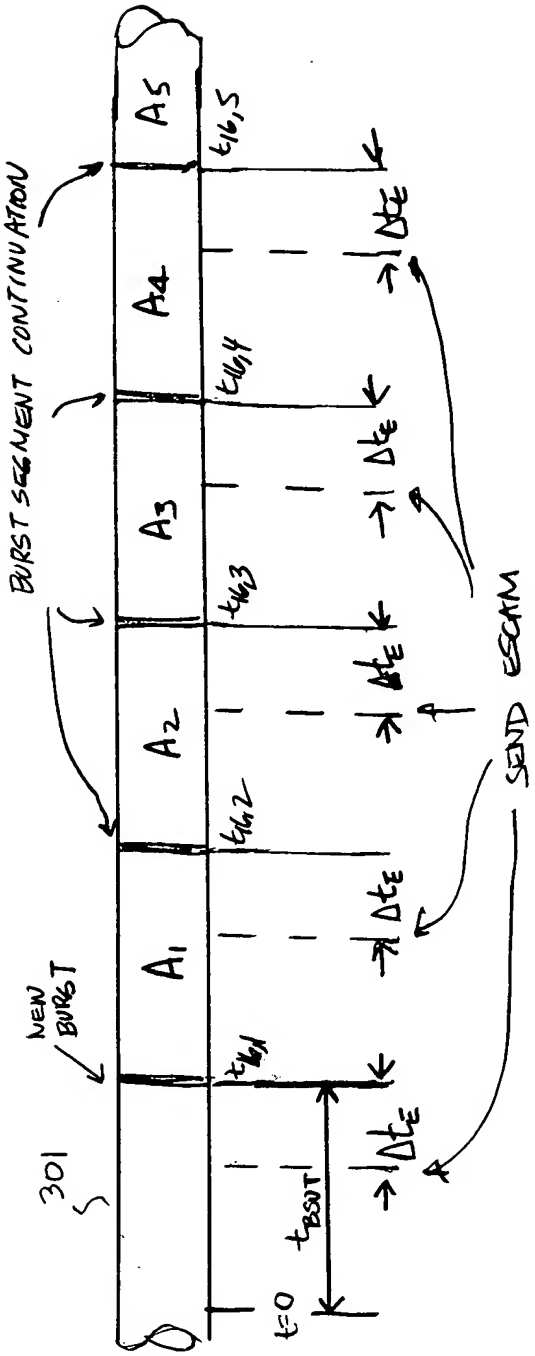
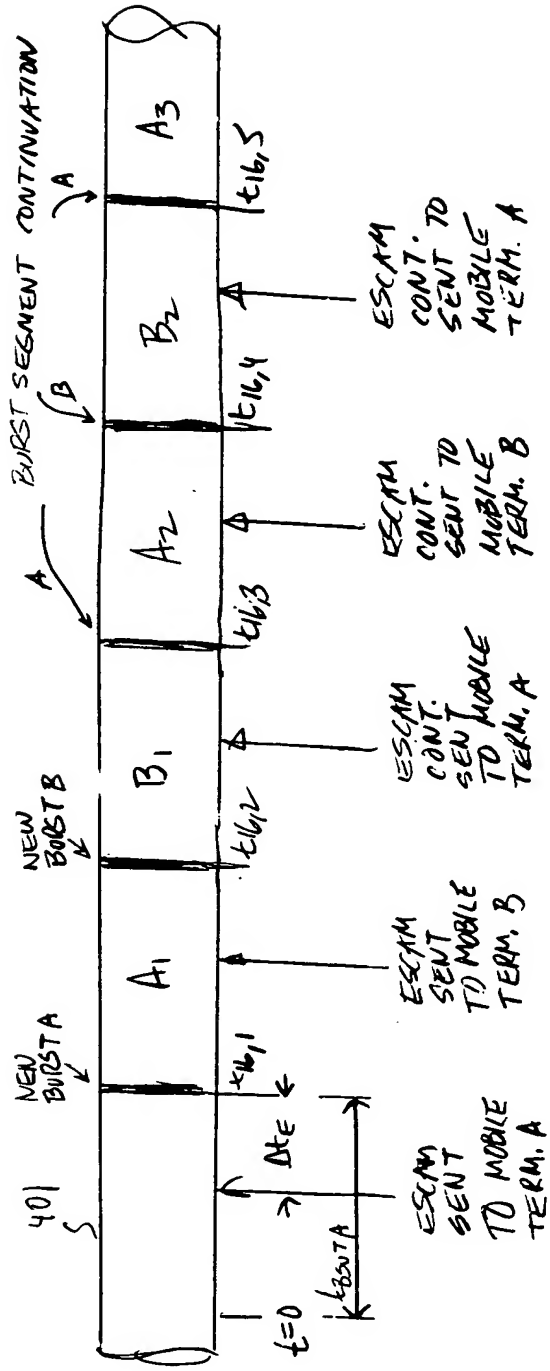

301
NEW BURST
BURST SEGMENT CONTINUATION
A1
A2
A3
A4
A5
t16,1
t16,2
t16,3
t16,4
t16,5
t=0
tBSOT
ΔtE
SEND ESCAM

FIG. 4


401
NEW BURST A
NEW BURST B
BURST SEGMENT CONTINUATION
A
B
A1
B1
A2
B2
A3
t16,1
t16,2
t16,3
t16,4
t16,5
t=0
tBSOT A
ΔtE
ESCAM SENT TO MOBILE TERM. B
ESCAM CONT. SENT TO MOBILE TERM. A
ESCAM SENT TO MOBILE TERM. A
ESCAM CONT. SENT TO MOBILE TERM. B
ESCAM CONT. SENT TO MOBILE TERM. A

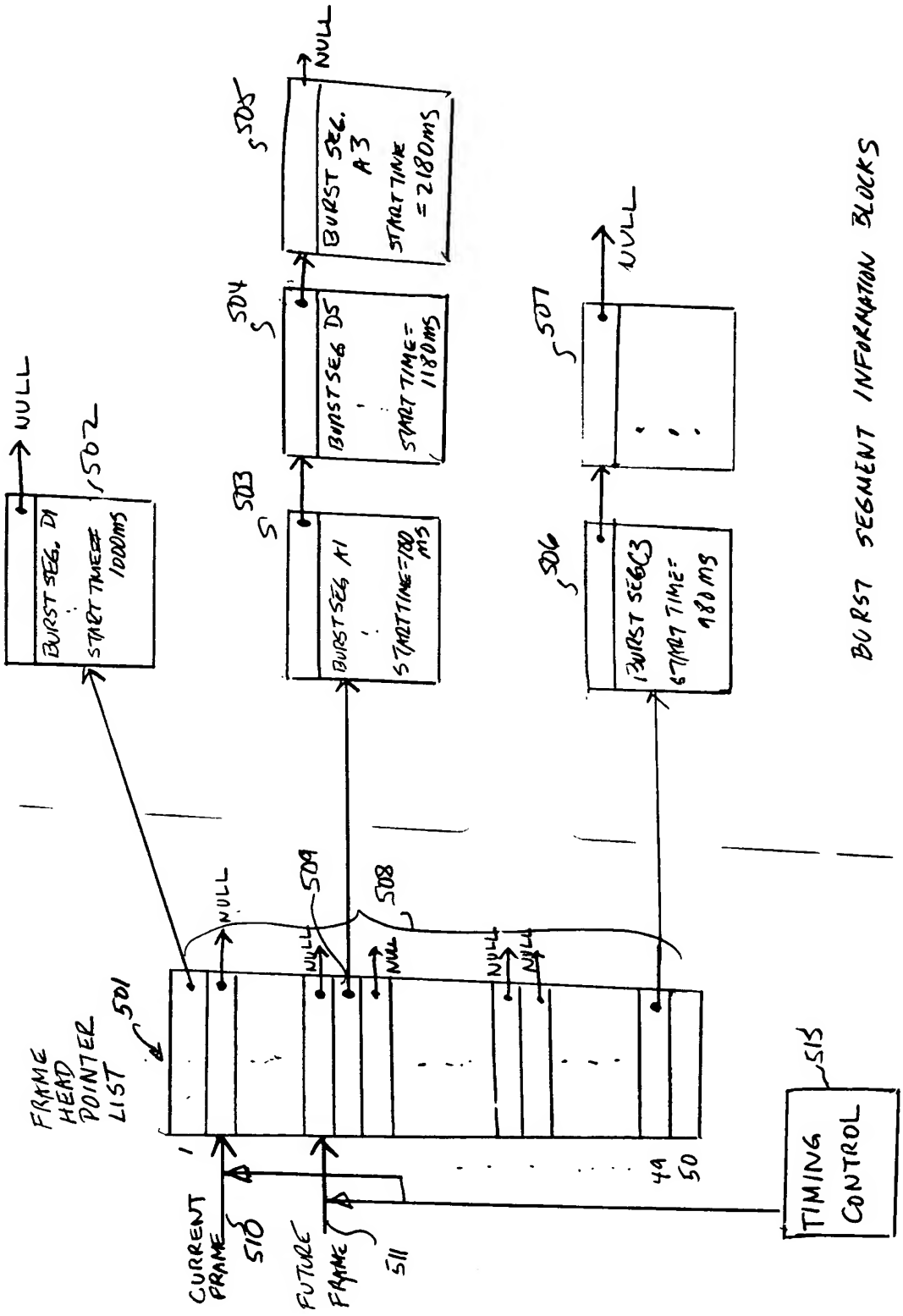
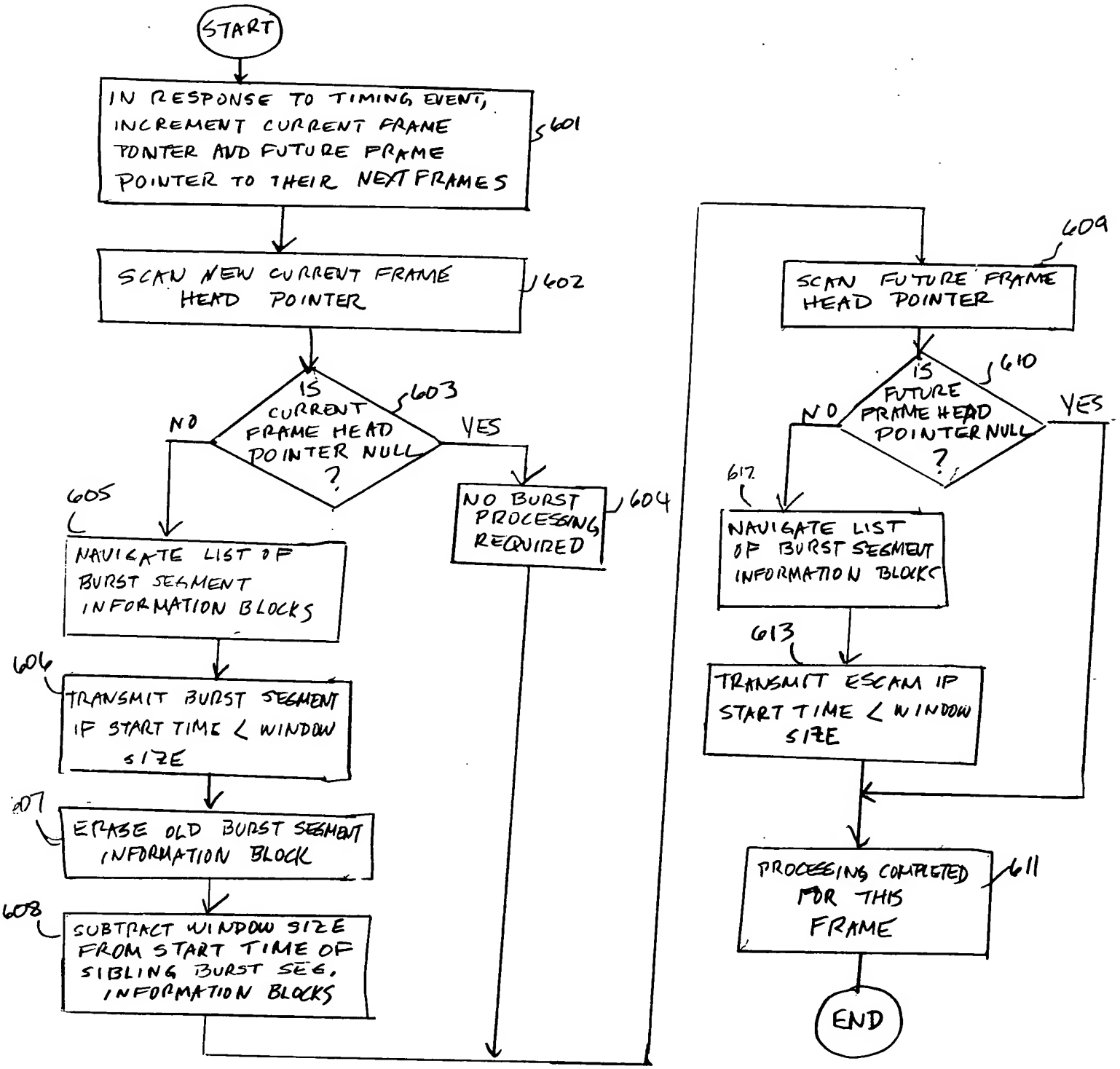

FRAME HEAD POINTER LIST
501
1
49
50
CURRENT FRAME
510
FUTURE FRAME
511
TIMING CONTROL
515
NULL
502
BURST SEG. D1
START TIME= 1000MS
503
BURST SEG A1
START TIME=1180 MS
504
BURST SEG D5
START TIME= 1180MS
505
BURST SEG. A3
START TIME = 2180MS
506
BURST SEG C3
START TIME= 980 MS
507
508
509
BURST SEGMENT INFORMATION BLOCKS
500

FIG. 5

FIG. 6


START
IN RESPONSE TO TIMING EVENT, INCREMENT CURRENT FRAME POINTER AND FUTURE FRAME POINTER TO THEIR NEXT FRAMES
601
SCAN NEW CURRENT FRAME HEAD POINTER
602
IS CURRENT FRAME HEAD POINTER NULL ?
603
NO
YES
NO BURST PROCESSING REQUIRED
604
NAVIGATE LIST OF BURST SEGMENT INFORMATION BLOCKS
605
TRANSMIT BURST SEGMENT IF START TIME < WINDOW SIZE
606
ERASE OLD BURST SEGMENT INFORMATION BLOCK
607
SUBTRACT WINDOW SIZE FROM START TIME OF SIBLING BURST SEG. INFORMATION BLOCKS
608
SCAN FUTURE FRAME HEAD POINTER
609
IS FUTURE FRAME HEAD POINTER NULL ?
610
NO
YES
NAVIGATE LIST OF BURST SEGMENT INFORMATION BLOCKS
617
TRANSMIT ESCAM IF START TIME < WINDOW SIZE
613
PROCESSING COMPLETED FOR THIS FRAME
611
END

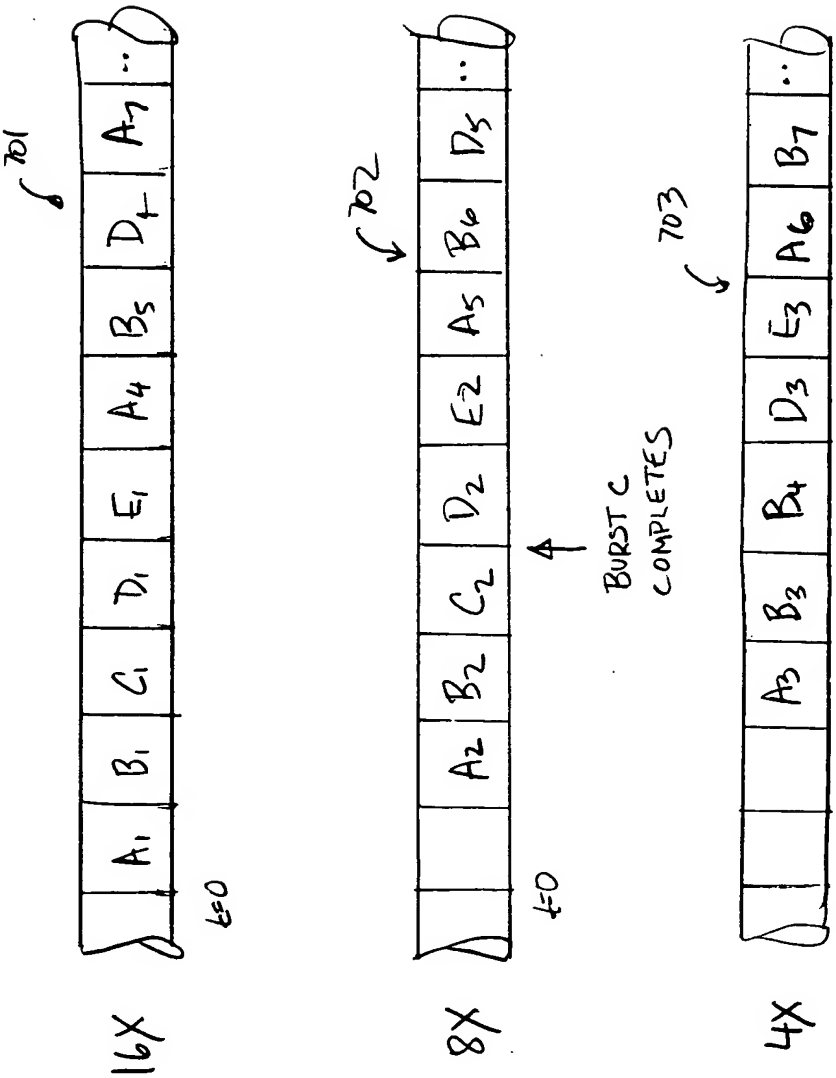
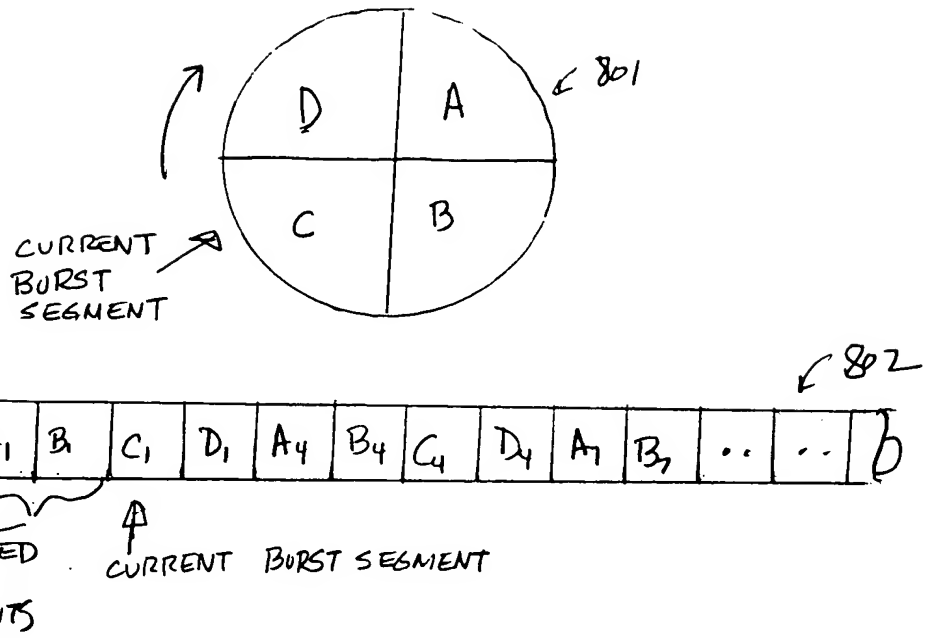

16X
701
A1 B1 C1 D1 E1 A4 B5 D4 A7 ..
t=0
8X
702
A2 B2 C2 D2 E2 A5 B6 D5 ..
t=0
BURST C COMPLETES
4X
703
A3 B3 B4 D3 E3 A6 B7 ..
t=0

FIG 8


D
A
C
B
801
CURRENT BURST SEGMENT
802
A1 B1 C1 D1 A4 B4 C4 D4 A7 B7 .. ..
COMPLETED BURST SEGMENTS
CURRENT BURST SEGMENT

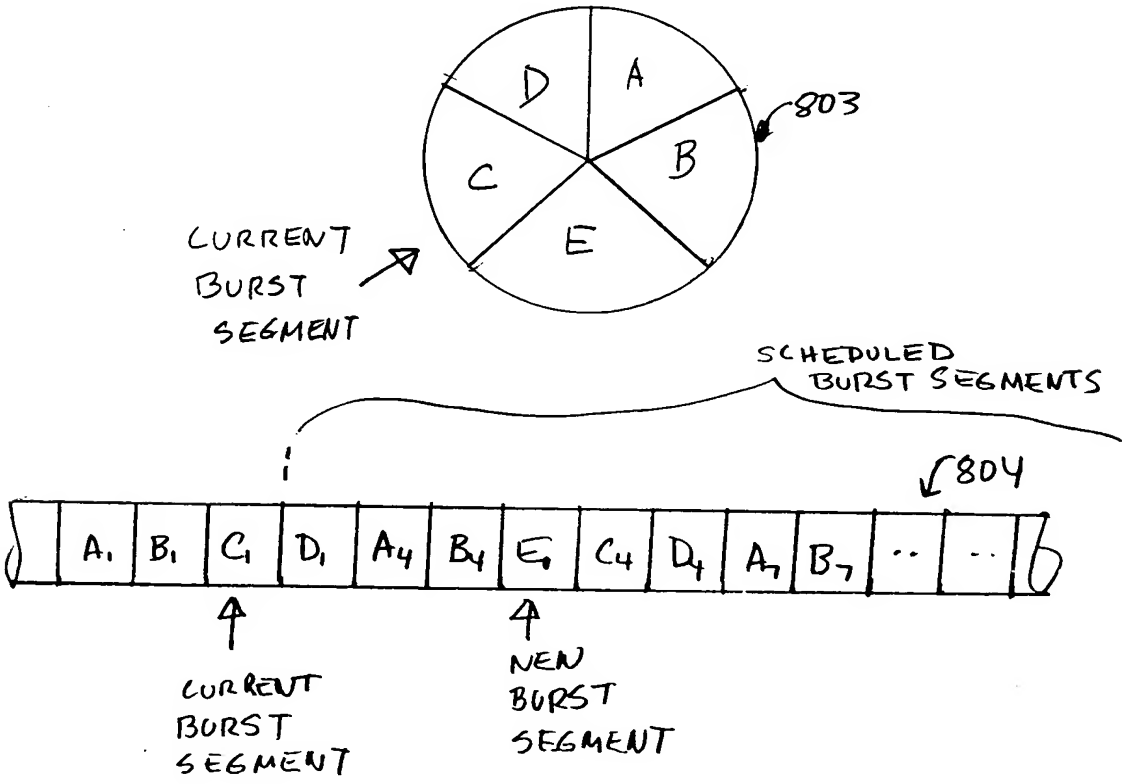

D
A
C
B
E
803
CURRENT BURST SEGMENT
SCHEDULED BURST SEGMENTS
804
A1 B1 C1 D1 A4 B4 E1 C4 D4 A7 B7 .. ..
CURRENT BURST SEGMENT
NEW BURST SEGMENT

FIG 9

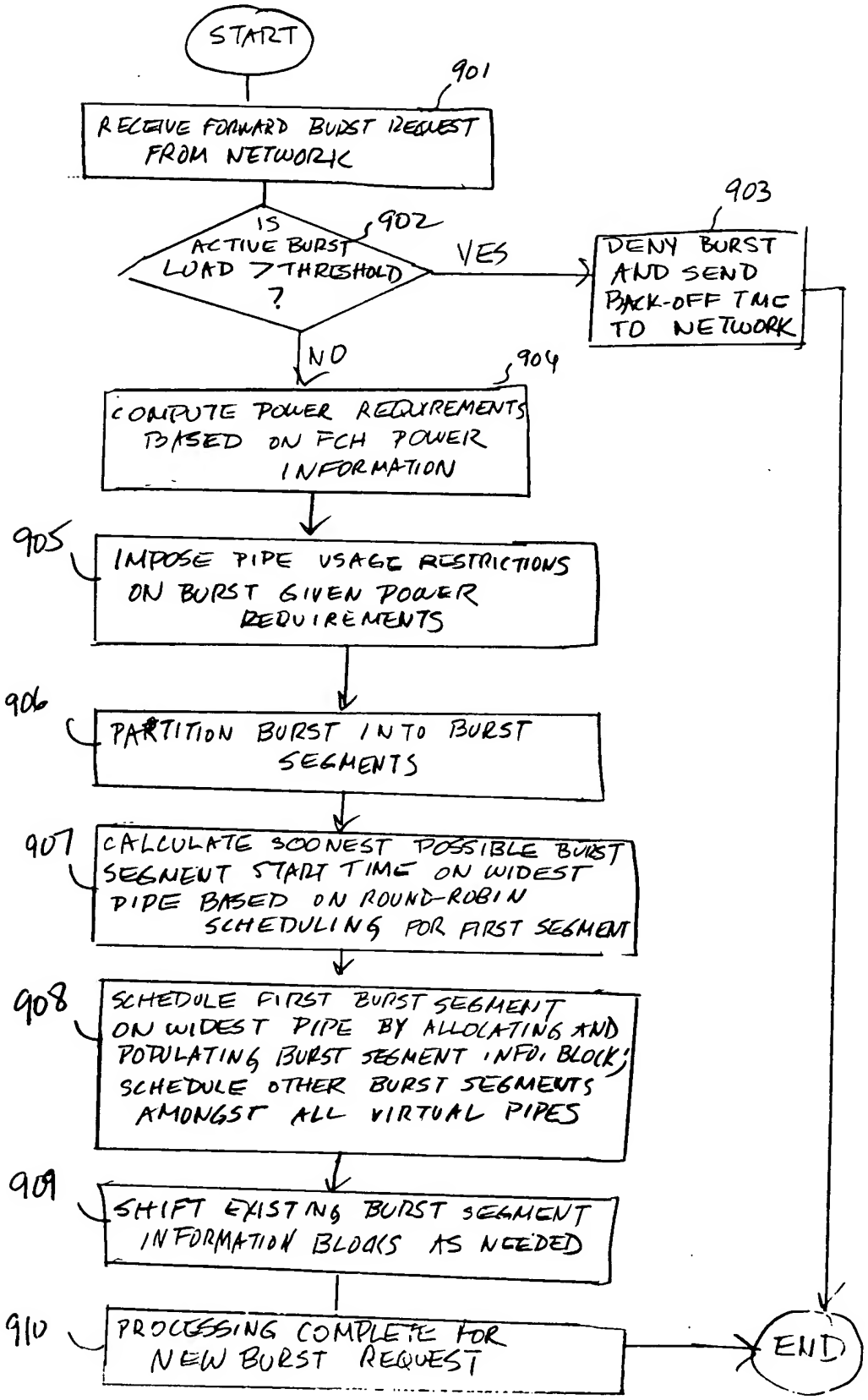
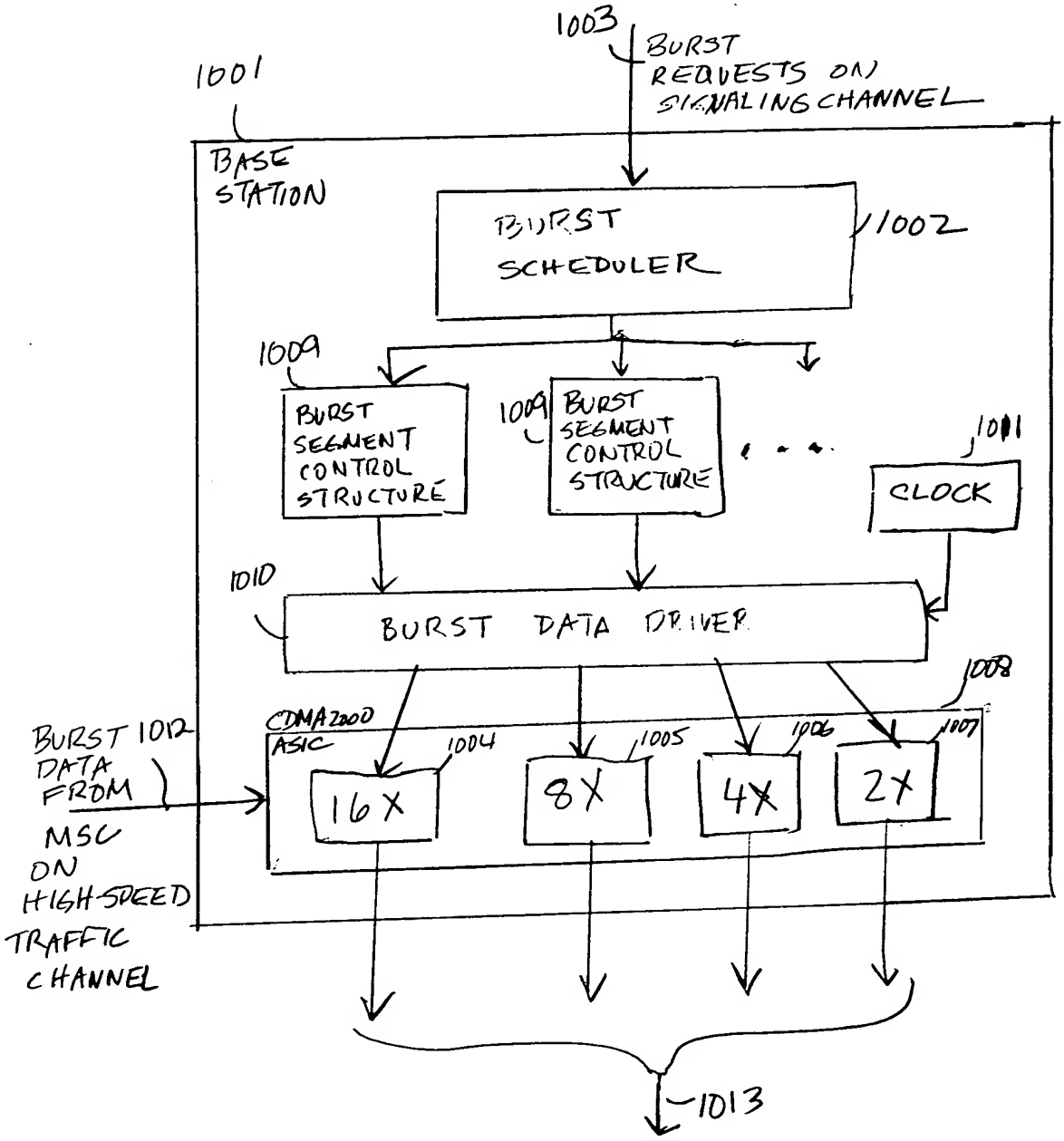

START
901
RECEIVE FORWARD BURST REQUEST FROM NETWORK
902
IS ACTIVE BURST LOAD > THRESHOLD ?
YES
903
DENY BURST AND SEND BACK-OFF TMC TO NETWORK
NO
904
COMPUTE POWER REQUIREMENTS BASED ON FCH POWER INFORMATION
905
IMPOSE PIPE USAGE RESTRICTIONS ON BURST GIVEN POWER REQUIREMENTS
906
PARTITION BURST INTO BURST SEGMENTS
907
CALCULATE SOONEST POSSIBLE BURST SEGMENT START TIME ON WIDEST PIPE BASED ON ROUND-ROBIN SCHEDULING FOR FIRST SEGMENT
908
SCHEDULE FIRST BURST SEGMENT ON WIDEST PIPE BY ALLOCATING AND POPULATING BURST SEGMENT INFO. BLOCK; SCHEDULE OTHER BURST SEGMENTS AMONGST ALL VIRTUAL PIPES
909
SHIFT EXISTING BURST SEGMENT INFORMATION BLOCKS AS NEEDED
910
PROCESSING COMPLETE FOR NEW BURST REQUEST
END

FIG 10


1003
BURST REQUESTS ON SIGNALING CHANNEL
1001
BASE STATION
BURST SCHEDULER
1002
1009
BURST SEGMENT CONTROL STRUCTURE
1009
BURST SEGMENT CONTROL STRUCTURE
1011
CLOCK
1010
BURST DATA DRIVER
1008
CDMA2000 ASIC
1004
16X
1005
8X
1006
4X
1007
2X
BURST DATA FROM MSC ON HIGH-SPEED TRAFFIC CHANNEL
1012
1013